

R E P O R T
on the
PROPERTIES OF THE SANTA EULALIA MINES
COMPANY
EAGLE COUNTY COLORADO.

by

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Report furnished by Etienne A. Ritter, Denver, Colorado.

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LETTER OF TRANSMITTAL.

Denver, Colorado.

408 - 8 Empire Building.

October 10th 1923.

Mr. Dwight G. Safford,

Secretary of the Santa Eulalia Mines Co.,

Salt-Creek, Wyoming.

Dear Sir:-

I went to examine the property of the Santa Eulalia Mines Co., located in Eagle County, Colorado, during the first week of October 1923, and I submit the following report.

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REPORT
ON THE PROPERTY OF THE SANTA EULALIA
MINES COMPANY,
IN EAGLE COUNTY, COLORADO.

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-----INTRODUCTION-----

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The Santa Eulalia Mines Company owns in fee simple the Valley lode mining claim, U. S. Patent No. 1944 the Combination lode mining claim, U. S. Patent No. 1945, and the Rosa Lea, the Rosa Lea No. 2, the Rosa Lea No. 3, the Rosa Lea No. 4, and the Rosa Lea No. 5, all held by right of discovery and annual assessment work, and holds also under escrow agreement, and with right of purchase, the K.P. Brown lode mining claim, U. S. Patent No. 6192. These claims are all located in the Wilkinson Mining District, Township 5 South, Range 79 West, in Eagle County, Colorado. They cover an area of about 120 acres.

The property is located in the main mineral belt of Colorado, which extends in a North-East and South-West direction, through the State, from Boulder County to the San Juan Mountains.

The lode on which the claims are located is an important one, which can be traced for more than two miles along its outcrop at the surface of the ground, from the basin of Big Horn creek, through the basin of Deluge creek and past the summit of the Gore range, from Eagle into Summit County.

In the center of the group of claims, which cover it, the lode crosses a glacial basin or amphitheater, on the high slopes of the Gore Range, at an altitude of from 11,000 to 12,000 feet, close to a beautiful lake, called Santa Eulalia lake, and which will make a very useful natural reservoir for the impounding of the water needed to be used for the water power, planned to be harnessed by the Santa Eulalia Mines Company.

The mining claims are located, on the Western slope of the range, just above timberline. A crosscut tunnel, planned to cut the lode at a depth of about 400 feet will start about 200 feet below timberline and will have its portal well protected by large pine trees.

The nearest railroad station is Minturn, on the main transcontinental line of the Denver and Rio Grande Railroad, from Denver to Salt-Lake City. From Minturn, a good automobile road follows up the valley of the Gore River, towards its head, in a general direction, almost due East, for a distance of close to ten miles, with hay ranches on both sides, up to the junction of the North Fork with the Black Fork of the Gore River.

From this point, a good trail for muleback transportation leads to the property. The trail climbs about 3,000 feet vertically, in a distance of less than 4 miles. It climbs gradually on the South slope and along the side of the North Fork of the Gore river, to the valley of its tributary, Deluge creek. It then goes down a short distance, crosses Deluge creek and then follows it up to the amphitheater, where nestles Santa Eulalia lake.

The important mining lode, which makes the object of this report crosses the cliffs enclosing the basin of the lake, in an abrupt rocky ridge, on top of which the U. S. Mineral Monument No. 6192 is a conspicuous feature of the landscape.

THE GEOLOGY AND THE MINE WORKINGS.

The Santa Eulalia lode is a typical quartz lode in granite, similar to those which have produced heavily near Georgetown and Silver Plume, in Clear Creek County, Colorado, and it is located within the South-west extension of the same mineral belt. I use the term lode, here, instead of the vein, as describing better the geological conditions. This is a sheared and mineralized zone, from 100 to 200 feet wide in places, with well defined and mineralized quartz streaks running through it. Near the high ridge, which marks the summit, dividing the valleys of the Big Horn and Deluge creeks, the quartz zone, in the lode, has reached a width of more than 100 feet, for a certain distance, along the strike.

At the North end, the lode is well exposed at the surface and work has been done on it in a number of cuts on the Rosa Lea No. 3, the Rosa Lea No. 2 and Rosa Lea, which cover its outcrop in the Big Horn valley. On the North slope of Deluge creek, the lode shows a very strong outcrop covered by the Combination claim.

A tunnel 80 feet long, of which the entrance is now blocked by a rock slide, but which could be reopened with comparatively little work has been driven on an important quartz zone of the same claim.

At the South end, near the boundary of Eagle and of Summit counties, the lode has been opened up by two tunnels, one above the other. The upper tunnel is 50 feet long. The lower tunnel is 35 feet long. The quartz zone there contains considerable copper minerals, principally chalcopyrite, malachite and azurite, with gold and silver values associated with the copper minerals.

However, the lode shows at the surface the largest amount of mineralization in its central part, covered by the K. P. Brown claim. Here, the greatest development of the lode at the surface has been done. More than half a dozen trenches and open cuts show the lode well mineralized in a number of places, along several important parallel zones of quartz, and for a distance of more than 1,000 feet along the strike of the lode. In the early days, a shaft 28 feet deep was sunk on one of these quartz zones, about 10 feet thick, and showing considerable copper minerals. A sample of 500 pounds was shipped to Leadville and returned a total value of \$ 110.00 per ton of ore, in copper, gold and silver. Recently, a general sample taken from all the cuts on this claim gave as returns per ton: 7.8% copper, 0.3 oz gold and 8 ozs silver. The quartz of the quartz leads, scattered through the width of the lode is a honeycombed quartz, with a great deal of limonite and iron stains, and with chalcopyrite, azurite and malachite, well scattered through it.

It is probable that at a depth of from one to two or three hundred feet, these various streaks join together, and form a single vein, in which the values will have been sufficiently concentrated to make a valuable ore body, which will pay well to mine.

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THE PROPOSED DEVELOPMENT WORK, TIMBER
AND WATER POWER.

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There is a large amount of very big timber on Deluge creek, immediately below your claims. A great deal of this timber has reached its full growth and should be cut. I feel confident that you will be able to make the proper arrangements with the U. S. Forest Service for all the timber that you will need. You should install a small saw-mill to be run by water-power, next to a power plant to be installed. You may perhaps also install a small hoist with a light rope to haul the timber, that is to say the logs, to the saw-mill.

It will be necessary to explore the lode at a depth of between 200 and 400 feet below the outcrop, to determine its real value and to find out if a good gold and silver mine, carrying also some copper, exists in your lode. A sketch added to this report gives an approximate idea of the contour of the ground, of its steepness and it shows how long a crosscut tunnel should be needed to cut the lode at points 250 feet or 400 feet below the surface. In the first case, a tunnel 800 feet long and in the second, a tunnel 1,200 feet long would be required.

Before the exact depth at which the tunnel should be driven, and the exact location of its portal and of its course are decided upon, it will be necessary to have an accurate systematic survey made. It will be necessary to know from such a survey the exact amount of dead work in cross-cut to reach the lode and to crosscut the lode itself, which will be required for a number of given depths. The location of the tunnel and the depth at which it will be best to drive it will be made then, with the full knowledge of the factors controlling this problem.

A greater amount of work in drifting on the vein should be done, than in reaching it with the crosscut tunnel. In these conditions, I consider than an amount of 2,000 feet in all, for the crosscut tunnel and the drifts will be necessary and sufficient to test thoroughly the value of your property. This work could be done on half the price per foot of cross-cuts and drifts, if you use machine drills, than if you do the work by hand. For this reason, I advise you to equip your property with water power, a small air compressor, air drills and electric lights.

You have next to your property, in Santa Eulalia lake and in its outlet into Deluge creek, with its fine water-falls a natural water power plant of great value. You should use it to generate 35 Horse power at the brake of a Pelton wheel. This would give you the power needed to run an Ingersoll-Rand straight line, belt driven air compressor class ER-I, size 9 x 8, to operate a type DCRW Jackhammer, the machine you need to drift with.

You will need an accurate weir measurement of the flow of water at the outlet of Santa Eulalia lake into Deluge creek, and a survey of the slope and vertical fall of the water, for a given distance, down the creek, to get the location of your power plant, along the creek.

A superficial examination leads me to believe that you will have an ample amount of water and that you will have to carry it in a five inches pipe for a distance not to exceed 2,000 feet, to get the proper head.

The whole plant installed, with cabins for the camp, the blacksmith's shop, water power plant, air compressor plant and air drills, a small saw-mill and the necessary tools, will not exceed \$ 13,000. The cost of crosscutting and of drifting 2,000 feet at \$ 11.00 per foot will be \$ 22,000, and the purchase of the K. P. Brown claim will require an additional expenditure of \$ 5,000.

This makes the total cost of the expenditures outlined above \$ 40,000.00, which is the sum you need to carry this program out.

When the proper location of the tunnel has been decided upon, you should locate one or two mining claims to cover it. You should also locate one or two mill-sites to cover the ground to be used by you for your power plant and the mining camp.

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CONCLUSIONS.

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In conclusion, the Santa Eulalia Mines Company owns or controls an important mining lode, for a distance of close to 12,000 feet along its strike. I believe that the surface showing, as disclosed in the shaft and in the open cuts, justifies the carrying out of a plan of development work, such as has been outlined in this report, in the hope of opening up a valuable mine.

Respectfully submitted,

(Signed) Etienne A. Ritter.

Photograph No. 1 - The railroad station of Minturn, on the main line of the Denver and Rio Grande Railroad, and nearest rail connection of the Santa Eulalia mining property.

Photograph No. 2 - The present camp of the Santa Eulalia mining force, on Mann's ranch, in the valley of the Gore river.

Photograph No. 3 - Some of the timber, which could be used, found at the saddle which separates Deluge creek and the North Fork of Gore river. Notice the size of the trees, in comparison with the men and the horse.

Photograph No. 4 - Some of the timber available. The trees are from 50 to 100 feet high. The timber is found near the head of Deluge Creek, about 1,000 feet only from where the tunnel will be located.

Photograph No. 5 - A view of the vein outcropping on the abrupt slope, which closes to the West the basin of Deluge creek. Notice at T, the 80 foot tunnel on the Combination lode mining claim.

Photograph No. 6 - The main peak, which dominates Santa Eulalia lake and the mining property. At T, a tunnel on the Rosa Lea No. 5 lode mining claim. Tr. is the point where the trail crosses from Eagle into Summit County.

Photograph No. 7 - The outcrop of the lode, at the East end of the K. P. Brown claim. The outcrop is indicated by a red line. Notice a stick and two men on the line of the prominent outcrop.

Photograph No. 8 - An open cut, showing quartz, with a great deal of copper minerals, towards the West end of the K. P. Brown claim. Notice the U. S. Mineral Land Monument, marked by a pile of large rocks and a high post.

Photograph No. 9 - View of a cut on the outcrop of the lode, and of the cliffs, that mark the same outcrop further East than the preceding photograph, near the center of the K. P. Brown claim. This outcrop is rich in quartz and copper minerals.

Photograph No. 10 - View of another cut, also on the K. P. Brown claim, about 200 feet to the East of the cut shown in the photograph above.

Photograph No. 11 - Photograph taken from the outcrop of the lode looking down Deluge valley, along the line of the proposed tunnel. The ground slopes much more steeply than it seems to do on the photograph.

Photograph No. 12 - Photograph showing the width of the lode. The two men are standing on two parallel zones of mineralized quartz, about 100 feet apart.

Photograph No. 13 - A panoramic view of Santa Eulalia lake, showing what wonderful natural water-power reservoir exists there.

Photograph No. 14 - The water-falls of Deluge Creek, at its outlet from Santa Eulalia lake. The size of the stream can be seen by comparison with the man standing close to it. The slope is steeper than appears on the photograph.

Photograph No. 15 - View of an open cut near the center of the K. P. Brown claim, about 300 feet West of the shaft, showing good copper minerals.